

Eastern University, Sri Lanka
Faculty of Commerce and Management
Third Year Second Semester Examination in BBA/BEcon
2015/2016 (July, 2018)
(Proper/ Repeat)
ECN 3023: Managerial Economics

Answer all questions

Time: 03 Hours

Define Managerial Economics. (03 Marks)

'Managers always have alternatives in decision making'. Justify with an appropriate example. (04 Marks)

Briefly explain how the two market forces belong to consumers and producers. (05 Marks)

Demand and Supply functions are given as:

$$Q_d = 800 - 10P$$

$$Q_s = -100 + 10P$$

Where, Q_d , Q_s and P are quantity demanded, quantity supplied and price, respectively.

- a. Calculate market equilibrium price and quantity. (03 Marks)
- b. At what price will the quantity demanded equal zero? (02 Marks)
- c. Suppose price increases by Rs.5, what would be the excess of supply? (03 Marks)

(Total 20 Marks)

What is meant by Elasticity? Briefly explain the determinants of types of elasticity of demand. (04 Marks)

State whether the following statements are True or False. Justify your statement.

- a. Demand for such products is relatively elastic or simply elastic if the consumers are highly responsive to price changes.
- b. The price elasticity of demand = - 4 when the price rises from \$4 to \$6 and quantity demanded falls from 100 to 80.
- c. High level of brand loyalty makes demand high price elastic.
- d. Necessities generally have less price elastic compare to luxury.
- e. The Cross Price elasticity would be positive if two commodities are complementary. (05 Marks)

iii.

The marketing department of an Apparel company that estimated the determinants of market demand for its T-Shirt production. The department estimations are given as follows:

NB: All variables were taken for natural logarithm and the company produces T-shirts in two colours; Grey and Green. Dummies are applied as 1 for Grey and 0 otherwise.

| Variables | Coefficient | t-value | p-value |
|------------------------------|-------------|---------|---------|
| Constant | 1.499 | 4.596 | 0.000 |
| Price | -1.265 | 2.568 | 0.000 |
| Price of rival's brand | 0.568 | 0.265 | 4.698 |
| T-Shirt colour (Dummy) | 0.104 | 1.658 | 0.068 |
| Advertisement expenditure | 1.985 | 2.005 | 0.050 |
| Income of age group of 20-35 | 1.568 | 2.598 | 0.005 |
| Income of age group of 35-55 | 0.986 | 1.112 | 2.365 |
| R-square | 85.369 | | |

- a. Interpret each coefficient and R-square
- b. Test significance level of each variable.
- b. What would the advice be of the marketing department to increase the demand for the T-Shirt? (Your advice may be subject to the important variables that are likely determining the demand for T-Shirt).

(Tot

3.

- i. What is explained by a short-run production function? Briefly explain that under what circumstances a production unit can persist under Short-run production process.
- ii. A short-run production function of a firm is given as follows:

$$Q=f(L,K)= 42L+ 18L^2 - L^3$$

Where, Q, K and L are Output, Capital and Labour hours, respectively

- a. Derive marginal and average production functions.
- b. Find the values of L where:
 - MPL is at its maximum.
 - APL is at its maximum.
- c. Find the elasticity of production at a point where the inflexion point is located.

iii. Miller company uses two inputs, X and Y, in its production function. The production function is;

$$Q = 40X^{0.5}Y^{0.5}$$

where inputs and output are in units per week.

The market price of input X is \$100 per unit and that of input Y is \$20 per unit.

Miller has a budget constraint of \$16,000 per week.

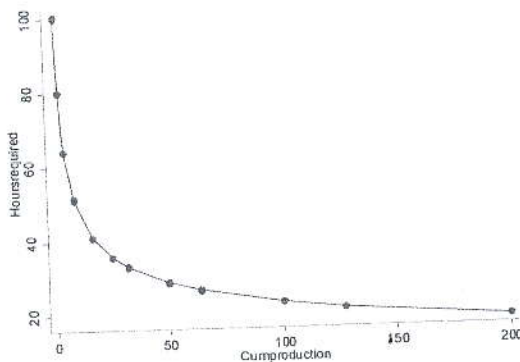
- Find the level of capital and labour at the optimum level. (03 Marks)
 - Measure the firm's output level at the optimum level. (02 Marks)
 - Suppose the price of per output is \$3, find profit. (01 Marks)
 - Find the value for lambda (λ) and interpret it (02 Marks)
- (Total 20 Marks)**

What is meant by Learning Curve Effect? Briefly explain how far learning curve creates benefits for operations managers. (05 Marks)

Explain how do economies of scale and learning curves are associated with costs of a firm. (05 Marks)

A Robot producing company measured learning curve for a group of workers in the assembling units as follows:

$$Y = 100x^{-0.322}$$



- Calculate the hours required when the group of workers assemble 50th, 100th and 155th unit of Robots. (05 Marks)
- How would you interpret if the learning rate is 80% of this unit (05 Marks)

(Total 20 Marks)

5. i. Graphically explain how profit maximizing condition is satisfied when $MR = MC$
- ii. Briefly explain how Learner Index and Mark-up factor are associated with monopoly power of the firms.
- iii. Suppose a firm produces two products; **Dettol Soap (Q1)** and **Dettol Hand wash(Q2)** with one Brand. The producer faces two demand functions with a total cost function as follows:

$$Q_1 = 14 - 0.25P_1$$

$$Q_2 = 24 - 0.5P_2$$

$$TC = Q_1^2 + 5Q_1Q_2 + Q_2^2$$

- a. Find the level of price and quantity of the two products to maximize firm's profit.
- b. Calculate the maximum profit.

(Total